

HIGH STRENGTH FRICTION STIR WELDING

Abstract of the Disclosure

A precipitation hardened structural assembly is provided, including a first structural member and a second structural member positioned adjacent to the first structural member such that the first and second structural members define an interface therebetween. At least one friction stir weld joint joins the first structural member to the second structural member at least partially along the interface. The first and second structural members and the friction stir weld joint are solution heat treated at a first predetermined temperature schedule and precipitation heat treated at a second predetermined temperature schedule and wherein the friction stir weld joint comprises a refined grain structure having grain size of less than about 5 microns.

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